

# **JOURNAL OF PLASMA PHYSICS**

**VOLUME 13**

**1975**

**CAMBRIDGE**

**AT THE UNIVERSITY PRESS**

**1975**

PUBLISHED BY  
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London NW1 2DB  
32 East 57th Street, New York, N.Y. 10022

*Printed in Great Britain at the University Printing House, Cambridge*

# CONTENTS TO VOLUME 13

## PART 1 FEBRUARY 1975

The role of energy and momentum conservation in nonlinear beam-plasma interaction. K. JUNGWIRTH	page 1
Closed inner region solution including viscosity for resistive tearing in cylindrical geometry. R. J. HOSKING	27
Kinetic equations for plasmas subjected to a strong time-dependent external field. Part 3. Stochastic equations for plasma turbulence. R. BALESCU and J. H. MISGUICH	33
Kinetic equations for plasmas subjected to a strong time-dependent external field. Part 4. Dynamics of stochastic correlations. R. BALESCU and J. H. MISGUICH	53
The multiple water-bag model for forced oscillations in a warm isotropic plasma. M. L. NOYER, N. NAVET and M. R. FEIX	63
Energy absorption due to continuous spectrum of ideal MHD. J. A. TATARONIS	87
Confluence of three shock waves for transverse shocks and shocks in an aligned MHD field. A. R. BESTMAN	107
Space-charge limits in unneutralized relativistic electron beams. M. E. READ and J. A. NATION	127
Analytic BGK models and their modulational instability. H. SCHAMEL	139
A new and extended concept for reflexion and transmission coefficients for waves propagating in isotropic and anisotropic plasma. J. HEADING	147
Kinetic energy corrections for the free electrons in a high-frequency fully-ionized plasma. G. LUPU	167
On the stability of nonlinear waves coexisting with plasma beams. E. INFELD and G. ROWLANDS	173
On the stability of nonlinear magneto-sonic waves in a collisionless plasma. E. INFELD and G. ROWLANDS	189

## PART 2 APRIL 1975

The Maxwellian plus water-bag model: application to the propagation of longitudinal electron waves in a plasma with Maxwellian and mono-energetic supra-thermal electrons. J. P. TREGUIER and D. HENRY	193
Formation and recurrence of ion wave solitons. S. WATANABE	217
Nonlinear waves in a hot plasma by Lorentz transformation. P. C. CLEMMOW	231



On the linear cross-field instability problem. K. B. DYSTHE, K. D. MISRA and J. K. TRULSEN	page 249
Absolute maximum growth rates and enhancement of unstable electromagnetic ion-cyclotron waves in mixed warm-cold plasmas. S. CUPERMAN, L. GOMBEROFF and A. STERNLIEB	259
Hydrodynamic theory of surface-wave fluctuations in inhomogeneous plasma. YU. M. ALEIV, S. VUKOVIĆ, O. M. GRADOV and A. YU. KYRIE	273
Variational calculations for resonance oscillations of inhomogeneous plasmas. Y-K. M. PENG and F. W. CRAWFORD	283
The Maxwell field, its adjoint field and the 'conjugate' field in anisotropic media. K. SUCHY and C. ALTMAN	299
Parametric instability of transverse and Langmuir waves in a plasma. K. F. LEE	317
Wave propagation in a plasma in the presence of a spatially uniform external periodic magnetic field. K. P. DAS	327
Ordinary electromagnetic mode instability. C.-Z. CHENG	335
Thermalization of a beam by beam-plasma interaction. J. H. A. VAN WAKERAN and H. J. HOPMAN	349
A proposed high-current, nanosecond source of energetic ions. J. A. NATION	361
A model laser-compression experiment. J. E. CROW, I. J. SPALDING and J. A. WESSON	367
New, almost electrostatic, anisotropy instability. R. W. LANDAU	377

## PART 3 JUNE 1975

Re-normalized quasi-linear approximation of plasma turbulence. Part 1. Modification of the Weinstock weak-coupling limit. J. H. MISGUICH and R. BALESCU	385
Re-normalized quasi-linear approximation of plasma turbulence. Part 2. Validity of short-time expansion and Markovian truncation of the propagator. J. H. MISGUICH and R. BALESCU	419
Re-normalized quasi-linear approximation of plasma turbulence. Part 3. Collective binary correlations and turbulent de-trapping. J. H. MISGUICH and R. BALESCU	429
Reflexion and transmission theorems for characteristic waves in stratified anisotropic absorbing media. K. SUCHY and C. ALTMAN	437
Kelvin-Helmholtz instability of anisotropic plasma in a magnetic field. S. DUHAU and J. GRATTON	451
Plasma flows in a converging and diverging configuration and the associated plasma particle acceleration: kinetic approach. M. FRIDMAN	481

Self-modulation and stability of finite-amplitude ordinary and extraordinary waves in a cold magnetoplasma. Y. FURUTANI	page 499
Monatomic plasma-thermal radiation interaction: a weakly-ionized kinetic model. W. F. PHILLIPS and V. S. ARPACI	523
The propagation of a pulse in a dispersive plasma: an exact solution compared with various approximations. R. BUCKLEY	539
Coherent ion acceleration at a density gradient. S. Y. HSIEH, H. W. BLOOMBERG and S. P. GARY	553
Ion beam ordinary electromagnetic mode instability. J. D. GAFFEY	563
REVIEW	
<i>Basic Principles of Plasma Physics: a Statistical Approach, by S. Ichimaru</i>	571
INDEX TO VOLUME 13	573

